

**Amendments to the Claims:**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims:**

Claim 1 (Currently Amended): A wireless packet communication system comprising a base station and a plurality of mobile units, wherein

a mobile unit "i" notifies information indicating a transmission rate  $DRC_i(n)$  receivable with downlink, information of the transmission rate  $DRC_i(n)$  itself or information from which the transmission rate  $DRC_i(n)$  can be derived to a base station in every slots,

and the base station computes  $R_i(n)$  relevant to all the mobile units "i" in every slots capable of transmission in accordance with the following formula (1) or a formula equivalent to the formula (1),

further, the base station computes an evaluation function  $F_i(n)$  in a slot "n" relevant to all the mobile units "i" in accordance with the following formula (2); determines a mobile unit "m" showing maximum value of the evaluation function  $F_i(n)$ ; and

transmits a packet to the mobile unit "m" with a downlink at a transmission rate  $DRC_m(n)$  at which the mobile unit "m" is receivable,

$$R_i(n) = (1 - \frac{1}{t_c}) \times R_i(n-1) + \frac{1}{t_c} \times f(r_i(n-1)) \quad \dots (1)$$

wherein  $r_i(n)$  represents a transmission rate in a slot "n" relevant to a mobile unit "i";  $t_c$  represents a time constant;

and  $f()$  denotes an arbitrary function, provided if  $f(x) \neq C \cdot x$ .

$$F_i(n) = \frac{DRC_i(n)}{R_i(n)} \quad \text{(C is an arbitrary constant)} \quad \dots (2)$$

Claim 2 (Currently Amended): A wireless packet communication system according to claim 1, wherein, when it is assumed that the transmission rate  $DRC_i(n)$  at which the mobile unit "i" is receivable is an always constant value "x", when a target value of a relative throughput of the mobile unit is  $S(x)$ , the function  $f()$  is the following formula (3) or a formula equivalent to the formula (3):

$$f(x) = \frac{C \cdot x^2}{S(x)} \quad \text{(C is an arbitrary constant)} \quad \dots (3)$$

Claim 3 (Original): A wireless packet communication system according to claim 1, wherein function  $f()$  in the foregoing formula (1) is the following formula (4) or a formula equivalent to the formula (4):

$$f(x) = \frac{\sum_{k=1}^{N_2} h_k(x)}{\sum_{j=1}^{N_1} g_j(x)} \quad \text{( } g_j(x) \text{ and } h_j(x) \text{ are arbitrary functions. )} \quad \dots (4)$$

Claim 4 (Original): A wireless packet communication system according to claim 1, wherein the formula  $f()$  in the foregoing formula (1) is the following formula (5) and is a formula equivalent to the formula (5):

$$f(x) = \frac{\sum_{k=1}^{N_2} c_k \cdot x^{d_k}}{\sum_{j=1}^{N_1} a_j \cdot x^{b_j}} \quad (a_j, b_j, c_k \text{ and } d_k \text{ are arbitrary constants.}) \quad \dots (5)$$

Claim 5 (Original): A wireless packet communication system according to claim 4, wherein the constant in the foregoing function (5) is  $N_1=2$ ,  $b_1=0$ ,  $b_2=1$ ,  $N_2=1$ ,  $d_1=2$ .

Claim 6 (Original): A wireless packet communication system according to claim 4, wherein the constants in the foregoing function (5) is  $N_1=1$ ,  $b_1=0$ ,  $N_2=1$ ,  $d_1 \neq 1$ .

Claim 7 (Original): A wireless packet communication system according to claim 4, wherein the constants in the foregoing function (5) is  $N_1=2$ ,  $b_1=0$ ,  $b_2=1$ ,  $N_2=1$ ,  $d=1$ .

Claim 8 (Original): A wireless packet communication system according to claim 1, where in a plurality of mobile units are classified by a plurality of classes [1] to [M] in advance, and the function  $f()$  in the foregoing formula (1) is  $f_k(x)$  relevant to the mobile units of class [k] ( $k=1$  to  $M$ ).

Claim 9 (Currently Amended): A wireless packet communication system according to claim 8, wherein the foregoing function  $f_k(x)$  ( $k=1$  to  $M$ ) is  $f_k(x)$  that has a relationship with the following formula (6).

$$f_2(x) = \frac{1}{A_2} \cdot f_1(x)$$

$$f_3(x) = \frac{1}{A_3} \cdot f_1(x) \quad \text{(A is an arbitrary constant)} \quad \dots (6)$$

⋮

$$f_m(x) = \frac{1}{A_m} \cdot f_1(x)$$

Claim 10 (Original): A wireless packet communication system according to claim 1, wherein formula  $f()$  of the foregoing formula (1) relevant to a mobile unit is a function according to a position of the mobile unit; a distance between the mobile unit and the base station; an orientation of the mobile unit viewed from the base station, and a movement speed or an arbitrary combination of these factors.

Claim 11 (Original): A wireless packet communication system according to claim 1, wherein the function  $f()$  in the foregoing formula (1) is a function according to a communication load, a date and time, a meteorological condition, traffic state or an arbitrary combination of these factors.

Claim 12 (Original): A wireless packet communication system according to claim 1, wherein, in the case where a plurality of base stations exist, the function  $f()$  in the foregoing formula (1) is a function selected for each base station, carrier, or combination of these factors, and each of the base stations computes the foregoing formula (1).

Claim 13 (Original): A base station in a wireless packet communication system according to claim 1, wherein the base station computes the foregoing  $R_i(n)$  and  $F_i(n)$ , determines a mobile unit "m" showing maximum value of  $F_i(n)$ , and transmits a packet to the mobile unit "m" at a transmission rate  $DRC_m(n)$  at which the mobile unit is receivable.